

CLASS-B BIASED GILBERT CELLS AND QUADRATURE MODULATORS
ABSTRACT OF THE DISCLOSURE

Quadrature modulators include a quadrature splitter and a pair of Gilbert Multiplier Cells coupled to the quadrature splitter, each of which is biased in Class-B. The quiescent current bias in the Gilbert Multiplier Cells may be substantially zero.

- 5 Each of the Gilbert Multiplier Cells may include a pair of cross-coupled, emitter-coupled transistor pairs and a driver circuit that is coupled to at least one of the emitter-coupled transistor pairs and that is biased in Class-B. The driver circuit may include at least one current mirror circuit that is coupled to at least one of the emitter-coupled transistor pairs. The driver circuit also may include at least one
- 10 current source that selectively applies current to at least one of the emitter-coupled transistor pairs, more specifically by selectively applying current to the at least one current mirror circuit.